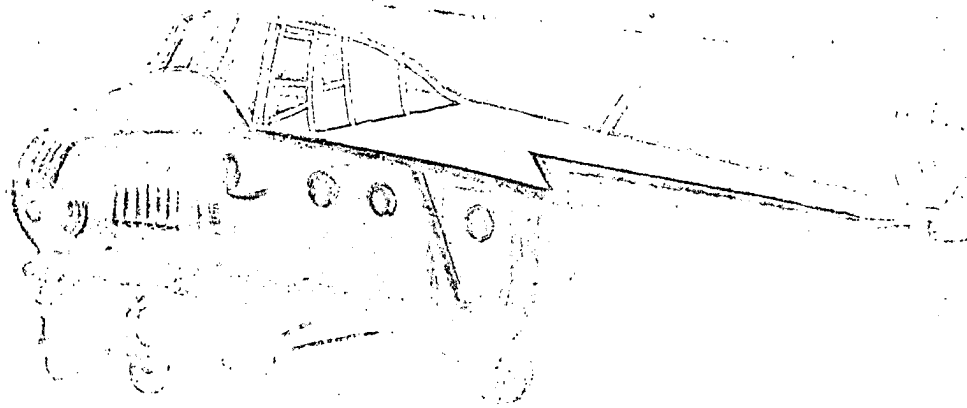


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*Реплика  
М-4*

PRINCIPAL PERFORMANCE  
and  
WEIGHT DATA  
of the Mi-4 HELICOPTER  
(1959)  
(Supplement to the Mi-4 Helicopter Description)

-I-

The performance of the Mi-4 helicopter being produced now is improved as compared to the helicopters of earlier production due to some structural modifications and development.

### Performance of the Mi-4 Helicopter fitted with Metal Blades

Maximum speed (at S.L. and up to <sup>3,280 ft</sup> 1,000 m.)	
with normal take-off weight of <sup>15,990 lbs.</sup> 7,250 kg.....	131 mph 210 km./hr.
with take-off weight of <sup>16,750 lbs.</sup> 7,600 kg. in overload	
condition .....	106 mph 170 km./hr.
Minimum speed .....	0
Service ceiling	
with normal take-off weight of <sup>15,990 lbs.</sup> 7,250 kg.....	19,670 ft. 6,000 m.
with take-off weight of <sup>16,750 lbs.</sup> 7,600 kg. in overload	
condition .....	16,400 ft. 5,000 m.
Hovering ceiling (with ground effect)	
with normal take-off weight of <sup>15,990 lbs.</sup> 7,250 kg.....	9,840 ft. 3,000 m.
with take-off weight of <sup>16,750 lbs.</sup> 7,600 kg. in overload	
condition .....	6,555 ft. 2,000 m.
Climb (with normal take-off weight)	
to: <sup>3,280 ft</sup> 1,000 m. ....	4 min.
<sup>9,840 ft</sup> 3,000 m. ....	11.6 min.
<sup>19,670 ft.</sup> 6,000 m. ....	32 min.
Practical range and cruising speed with normal fuel load of <sup>1323 lbs.</sup> 600 kg. and 5% reserve	
with normal take-off weight of <sup>15,990 lbs.</sup> 7,250 kg. ....	298 mi 480 km. 160 km./hr.
with take-off weight of <sup>16,750 lbs.</sup> 7,600 kg. in overload	99.5 mph
condition .....	289 mi 465 km. 160 km./hr. 99.5 mph

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Practical endurance and economic speed with normal fuel load  
 of 600 kg. and 5% reserve

with normal take-off weight of 7,250 kg. ....	<sup>15,990 lb</sup> 3 hrs20 min. 120 km./hr.
with take-off weight of 7,600 kg. in overload	<sup>16,750 lb</sup> 74.5 mph
condition .....	<sup>15,990 lb</sup> 3 hrs0.5 min. 120 km./hr. 74.5 mph

### The Mi-4 Performance

Maximum speed (at S.L. and up to 1,000 m.)	<sup>3,280 ft</sup>
with normal take-off weight of 7,250 kg. ....	<sup>15,990 lb</sup> 124 mph 200 km./hr.
with take-off weight of 7,600 kg. in overload	<sup>16,750 lb</sup>
condition .....	106 mph 170 km./hr.
Minimum speed .....	0

### Service ceiling

with normal take-off weight of 7,250 kg. ....	<sup>15,990 lb</sup> 18,040 ft. 5,500 m.
with take-off weight of 7,600 kg. in overload	<sup>16,750 lb</sup>
condition .....	14,750 ft. 4,500 m.

### Hovering ceiling (with ground effect)

with normal take-off weight of 7,250 kg. ....	<sup>15,990 lb</sup> 6,555 ft. 2,000 m.
with take-off weight of 7,600 kg. in overload	<sup>16,750 lb</sup>
condition .....	3,280 ft. 1,000 m.

### Climb (with normal take-off weight)

to: 1,000 m. ....	<sup>3,280 ft.</sup> 4.6 min.
3,000 m. ....	<sup>9,840 ft</sup> 13.2 min.
5,500 m. ....	<sup>18,040 ft</sup> 33.1 min.

Practical range and cruising speed with normal fuel load of  
 600 kg. and 5% reserve

with normal take-off weight of 7,250 kg. ....	<sup>15,990 lb</sup> 255 mi. 410 km. 160 km./hr.
with take-off weight of 7,600 kg. in overload	<sup>16,750 lb</sup> 99.5 mph
condition .....	246 mi. 395 km. 160 km./hr. 99.5 mph

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Practical endurance and economic speed with normal fuel load  
of 600 kg. and 5% reserve

with normal take-off weight of 7,250 kg. .... <sup>15,990 lbs</sup> 2 hrs. 55 min.  
120 km./hr.  
74.5 mph

with take-off weight of 7,600 kg. in overload <sup>16,750 lbs</sup>  
condition ..... 2 hrs. 40 min.  
120 km./hr.  
74.5 mph

### The Mi-4 Weight Data

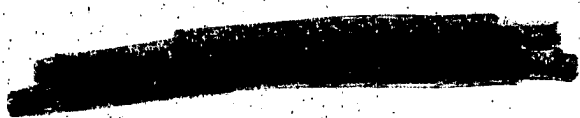
- |  |                                 |
|--|---------------------------------|
| 1. Normal take-off weight .....                | <sup>15,990 lbs</sup> 7,250 kg. |
| 2. Take-off weight in overload condition ..... | <sup>16,750 lbs</sup> 7,600 kg. |
| 3. Weight empty (standard Mi-4 helicopter) ... | <sup>10,720 lbs</sup> 4,860 kg. |
| 4. Full load (normal) .....                    | <sup>5,270 lbs</sup> 2,390 kg.  |
| 5. Full load (overload) .....                  | <sup>6,040 lbs</sup> 2,740 kg.  |

including:

pilot .....	<sup>176.5 lbs</sup> 80 kg.
oil .....	<sup>242.5 lbs</sup> 110 kg.

Fuel reserve and fuel required for take-off and landing ..

.....	<sup>202.5 lbs</sup> 100 kg.
full load (normal) .....	<sup>4,630 lbs</sup> 2,100 kg.
full load (overloaded) .....	<sup>5,400 lbs</sup> 2,450 kg.



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## L I S T

of auxiliary equipment (not included in standard weight empty, but which can be installed by the customer's request as a part of useful load)

Radio Equipment .....	303 <i>lb</i> 137.5 kg.
VHF transmitting-receiving radio set (PCNY-3)	
Automatic direction finder (APK-5)	
Radio altimeter (PB-2)	
Interphone equipment (CNY-2)	
Flux-gate gyro compass (ГМК-1)	
Co-pilot's Instrument panel .....	6.2 <i>lb</i> 2.8 kg.
Artificial horizon (ATK-47B)	
Air speed indicator (YC-250)	
Instrument Panel in Cargo Compartment .....	3.3 <i>lb</i> 1.5 kg.
Clock (ABPM)	
Altimeter (BJ-12)	
Panel structure and lighting equipment	
Troop-carrier, Freight and Ambulance Equipment ...	727.5 <i>lb</i> 330.0 kg.
Troop seats (for 16 men)	
Static cables (2)	
Loading ramps	
Vehicle wheel chocks (8)	
BJ-47 Winch (hand operated)	
Vehicle jacks	
Cargo tie-down cables	
Stretchers (8)	
First aid kit, thermoses and drinking pots	
Swivel brackets for stretchers	
Medical attendant's table	

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KPI-2I Oxygen regulators for the wounded (8)

Swing-in hoist with BJ-47 winch

Swing-in hoist with JMT-2 electrically-operated winch

Cabin combustion heater

Cabin heating ducts

Cargo doors light

Warning horn in cargo compartment

Ladder in cargo compartment

External cargo sling installation

Equipment ..... 706 lbs.  
320 kg.

Landing light

Taxying light

Flare magazine

Blade de-icing system

Alcohol for de-icing system

Pilots' oxygen equipment

Autopilot

Auxiliary fuel tank (500 litres)

Auxiliary fuel tank (2,000 litres)

Windscreen de-icing system

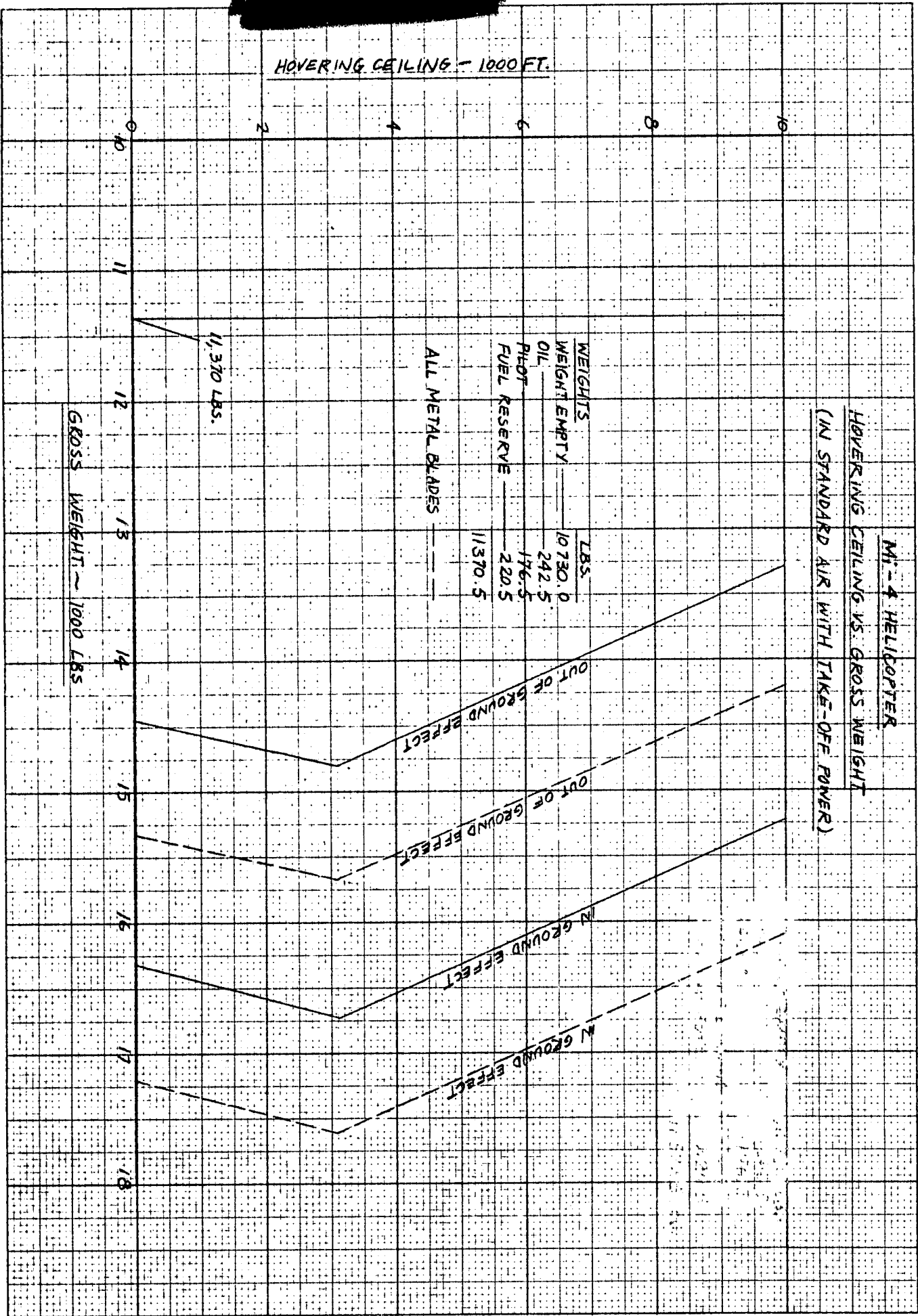
Ventral container

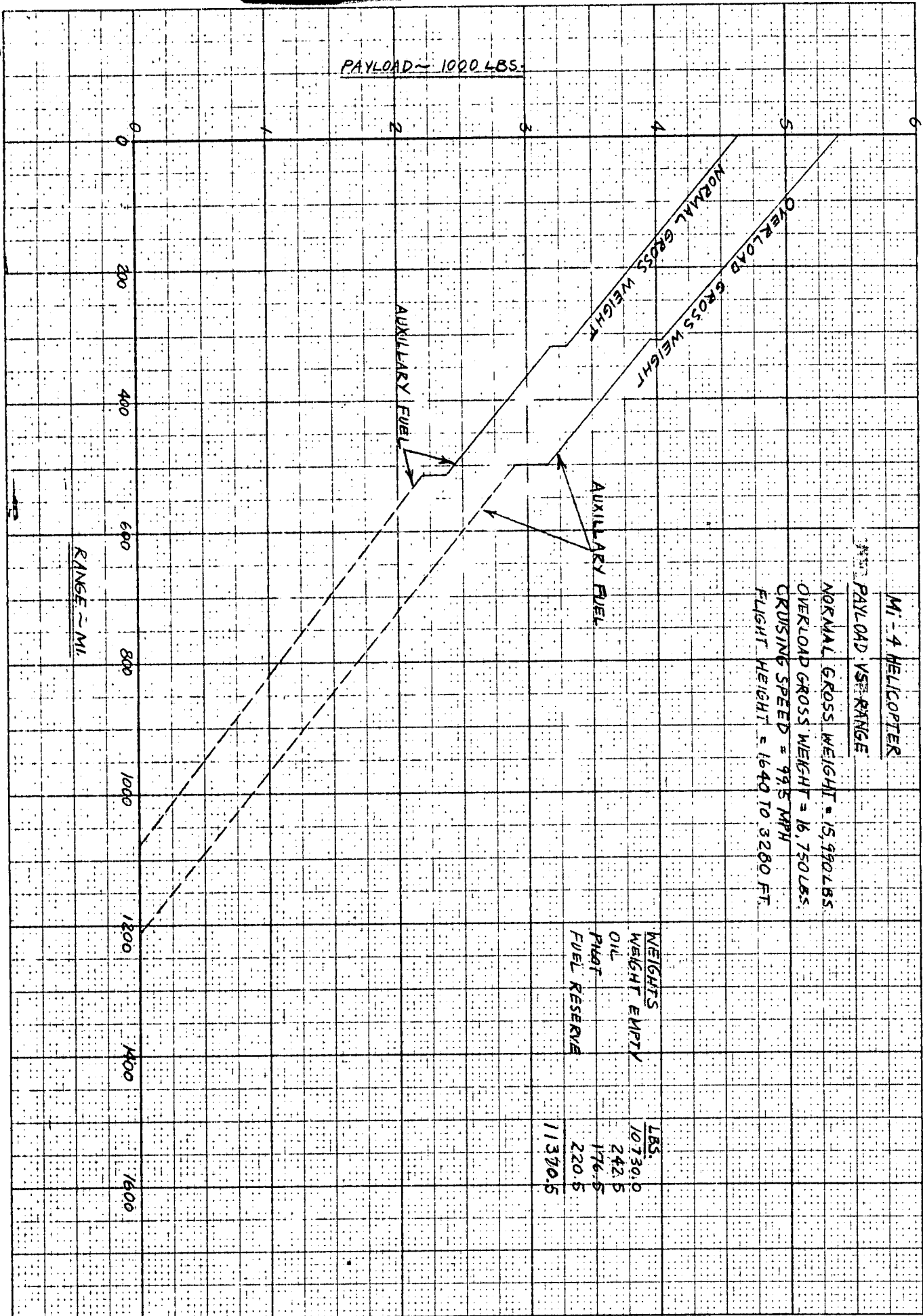
Neutral Gas System ..... 15.4 lbs.  
7.0 kg.

Piping

Gas bottle

Equipment for 11-passenger version (without a toilet  
room) ..... 772 lbs.  
350 kg.



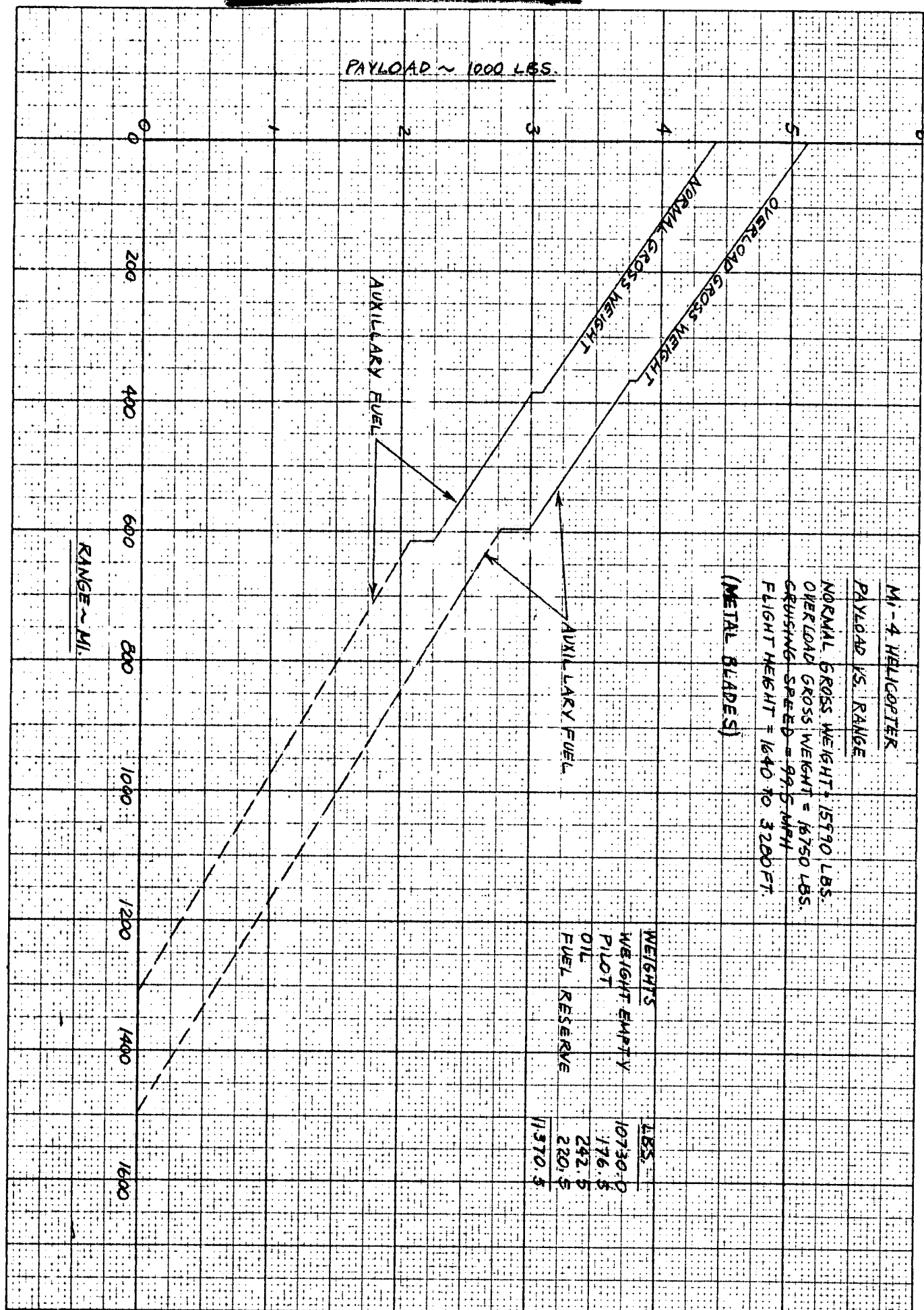


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## Approximate Operating Cost of the Mi-4 Helicopter

Operating costs depend considerably on the type of operation, operating conditions and the number of hours flown per year. These factors, in turn, affect the number of pilots and mechanics, amount of depreciation and insurance.

The operating costs are calculated on a monthly basis. "Daily" or "Yearly" costs can easily be calculated as indicated below.

### 1. Crew Members

The number of pilots required will depend on duties, the time of day or night and the number of days per week when the helicopter is operated. General formula for calculation of the crew monthly total salary:

number of pilots x monthly salary = dollars per month.

The number of mechanics depends upon the number of flights performed and the number of flying days per week, as well as the time of day or night when the mechanics work. Hence, mechanics' total salary is the number of mechanics x monthly salary = dollars per month.

### 2. Fuel and Oil

Fuel: Fuel consumption at cruising rating is approximately 260 litres per hour.

Litres per hour x litre cost = dollars per hour.

Lubricants: Their cost is estimated as 5% of fuel cost. Hence, 5% of cost (c) = dollars per hour.

Total fuel and oil cost:

Item (C) + Item ( ) = dollars per hour.

Number of flying hours per month x dollars, Item (e) = dollars per month.

### 3. Parts Replacement

Experience in the helicopter operation shows that the replacement of parts, including depreciation, is estimated at 22.60 dollars per hour. Hence, the number of flying hours per month x 22.60 dollars per hour = dollars per month.

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## 4. Engine Overhaul Cost

The cost of the engine overhaul including necessary replacement of parts is estimated at 7.30 dollars per hour, or the number of flying hours per month x 7.30 dollars per hour = dollars per month.

## 5. Depreciation

Depreciation costs are approximately estimated at 33.00 dollars per flying hour.

The number of flying hours per month x depreciation cost = dollars per month.

Operating cost of the Mi-4 helicopter is calculated by summing up all the costs totaled as follows:

pilots' salary	dollars per month
mechanics' salary	"
fuel and oil	"
parts replacement	"
engine overhaul cost	"
depreciation	"
total operating cost per month	"